NETWORK ASSISTED PROXIMITY SERVICE SESSION MANAGEMENT

FIELD

[0001] The present invention relates to network assisted proximity service session management. More specifically, the present invention exemplarily relates to measures (including methods, apparatuses and computer program products) for realizing network assisted proximity service session management.

BACKGROUND

[0002] The present specification generally relates to proximity service peer discovery as well as proximity service session management (i.e. session set-up and session release), which is assisted by the network, to which the communication subscribers of such proximity service session are connected.

[0003] Proximity services of Long Term Evolution (LTE) are just started to be feasibility studied by the 3rd Generation Partnership Project (3GPP) system aspects working group 1 (SA1), which substantially defines the service requirements for 3GPP systems, under work item "Feasibility Study for Proximity-based Services" (FS_ProSe). At that, the main service scenario for proximity services under LTE is identified as peer-to-peer (P2P) communication between terminals.

[0004] That is, a direct terminal to terminal communication without a detour via the network takes place in proximity service communication. Thereby, terminals implementing LTE proximity services will utilize LTE licensed spectrum for direct communication with other terminals for e.g. data sharing.

[0005] If a set-up of such proximity service communication is based on a pure peer-to-peer fashion, e.g. the layer 1/2 techniques as Bluetooth, a considerable risk for a terminal of being hacked by denial of service (DoS) attacks arises. Even in case of no attack but of a normal communication request (connection initiation) from another proximity service terminal, it is difficult for the called terminal (receiving subscriber) to authenticate the user identity in the calling party (initiating subscriber).

[0006] Hence, the problem arises that a communication set-up performed by only the involved proximity service subscribers, i.e. the terminals intended to perform terminal to terminal communication entails security risks for the involved subscribers and that usage of LTE licensed band in case of such independent connection management is uncontrolled.

[0007] Consequently, there is a need to provide for network assisted proximity service session management.

[0008] Since this new aspect of LTE is totally different from traditional telecommunications services in LTE, there is no related technical background available.

SUMMARY

[0009] Various exemplary embodiments of the present invention aim at addressing at least part of the above issues and/or problems and drawbacks.

[0010] Various aspects of exemplary embodiments of the present invention are set out in the appended claims.

[0011] According to an exemplary aspect of the present invention, there is provided a method comprising discovering a proximity service target, said proximity service target providing proximity service, and setting up, via uplink and downlink signaling, proximity service communication with said proximity service target.

[0012] The method may be a method of a terminal, a user equipment, a mobile station or a modem.

[0013] According to an exemplary aspect of the present invention, there is provided a method comprising receiving a signaling comprising a proximity service request for setting up a proximity service communication, and forwarding said signaling comprising said proximity service request.

[0014] The method may be a method of a base station or an access node of a cellular system.

[0015] According to an exemplary aspect of the present invention, there is provided a method comprising receiving a signaling comprising a proximity service request for setting up a proximity service communication between an initiating communication subscriber and a receiving communication subscriber, said proximity service request comprises at least an identity of said initiating communication subscriber and an identity of said receiving communication subscriber, verifying authorization of said proximity service communication based on said identities, and forwarding, upon affirmative result of verification, said signaling comprising said proximity service request.

[0016] The method may be a method of a network node.

[0017] According to an exemplary aspect of the present invention, there is provided an apparatus comprising a control module configured to discover a proximity service target, said proximity service target providing proximity service, and a connection controller configured to set up, via uplink and downlink signaling, proximity service communication with said proximity service target.

[0018] According to an exemplary aspect of the present invention, there is provided an apparatus comprising a connection controller configured to receive a signaling comprising a proximity service request for setting up a proximity service communication, and to forward said signaling comprising said proximity service request.

[0019] According to an exemplary aspect of the present invention, there is provided an apparatus comprising a connection controller configured to receive a signaling comprising a proximity service request for setting up a proximity service communication between an initiating communication subscriber and a receiving communication subscriber, said proximity service request comprises at least an identity of said initiating communication subscriber and an identity of said receiving communication subscriber, and a control module configured to verify authorization of said proximity service communication based on said identities, wherein said connection controller is further configured to forward, upon affirmative result of verification, said signaling comprising said proximity service request.

[0020] According to an exemplary aspect of the present invention, there is provided a computer program product comprising computer-executable computer program code which, when the program is run on a computer (e.g. a computer of an apparatus according to any one of the aforementioned apparatus-related exemplary aspects of the present invention), is configured to cause the computer to carry out the method according to any one of the aforementioned method-related exemplary aspects of the present invention.

[0021] Such computer program product may comprise (or be embodied) a (tangible) computer-readable (storage) medium or the like on which the computer-executable com-